Intracerebral metastases from ocular melanoma

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SUMMARY A blind painful eye may harbour an unsuspected malignant melanoma. We report a case of ocular melanoma that presented with confusion owing to direct extension via the optic nerve into the anterior cranial fossa.

Case report

A 71-year-old woman was admitted through casualty too confused to give a history. From friends it was learned that she had been suffering from headaches for several months. Her left eye had apparently been damaged in a road accident in 1969. Three months previously she was seen at another hospital complaining of pain and watering of her left eye. After that visit her name was placed on a waiting list for enucleation of the eye.

On examination at this hospital she was unkempt,

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dehydrated, and mildly pyrexial (37.7°C). There was no lymphadenopathy, the chest was clear, and there were no abdominal masses. She was disorientated in time and space. No neck stiffness was present, but she had bilateral extensor plantar responses.

Examination of the eyes revealed visual acuities of counting fingers only on the right with no perception of light on the left. The right pupil reacted sluggishly to light and the right disc was pale. The left eye was injected, the cornea was blood stained, and the anterior chamber flat. New vessels were evident on the left iris superiorly, with hyphaema preventing a view of the fundus. The left intraocular pressure was grossly elevated.

Fig. 1 Contrast-enhanced CT head scan showing a left sided lobulated mass in the subfrontal region (arrowed).

Fig. 2 Non-enhanced CT head scan showing calcified left globe (arrowed).

Fig. 3 Contrast-enhanced CT head scan showing mass in right posterior fossa producing compression of the brain stem (arrowed).

Fig. 4 Left eye cut to show necrotic tumour invading the optic nerve (arrowed).

Chest x-ray, routine haematological and biochemical tests, including liver function tests, were normal. Computed tomography of the orbits and brain showed a lobulated enhancing mass involving the left subfrontal region, suprasellar cistern, medial temporal lobe, and third ventricle (Fig. 1). The left optic nerve was thickened with widening of the optic canal. The globe appeared calcified, with a dense vitreous (Fig. 2). A second lesion appeared to arise on the inferior surface of the right side of the tentorium and lateral wall of the posterior fossa (Fig. 3). This was causing oedema in the adjacent cerebellar hemisphere producing compression of the brain stem.

Neurosurgical intervention was considered too hazardous, and she was treated with oral dexamethasone. Her condition deteriorated and she died 18 days after admission.

PATHOLOGY

At necropsy the cause of death was found to be fresh thrombus in both pulmonary arteries. In the cranium a necrotic tumour bulged from the floor of the third ventricle extending anteriorly along the left optic nerve. The optic chiasm was displaced to the right, and tumour was infiltrating the adjacent left temporal lobe. The left eye and optic nerve were infiltrated by

tumour. Necrotic tumour was also present in the right cerebellar hemisphere.

Microscopy of these tumours and the left eye showed malignant melanoma of epithelioid pattern. Much of the tumour was necrotic, but areas of viable mitotically active tumour cells had survived. The tumour had infiltrated the sclera of the left eye and spread along the optic nerve into the cranial cavity (Fig. 4). There was no macroscopic evidence of metastasis outside the brain.

Discussion

Optic nerve invasion by ocular melanoma is uncommon, being noted in 0.6% of 2535 cases.¹ Intracranial invasion via the optic nerve is rare. Terry documented two cases of histologically proved optic nerve spread in which presumed chiasmal involvement led to a hemianopia in the fellow eye.² To our knowledge there have been no clinicopathological reports of intracranial invasion by ocular melanoma without evidence of other extracranial metastasis at necropsy.

The presentation of metastasis from ocular melanoma is usually with symptoms referable to the liver or lungs.³ In a report of necropsies performed on patients with ocular melanoma, metastases were found in the liver in every case in which metastatic lesions were present.⁴

This case illustrates the need to maintain an index of suspicion about the underlying cause of blind, painful eyes and emphasises the value of CT scanning of the head and orbits in these patients.

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